Environmental Monitoring Report

Project Number: 50347-002
January 2026

TAJ: Dushanbe Urban Water Supply and Sanitation Project. Semestrial Environmental Monitoring Report for 01 July, 2025 –31 December, 2025

Prepared by Project Implementation group for the State Unitary Enterprise Dushanbevodokanal and the Asian Development Bank.

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CURRENCY EQUIVALENTS

(as of 31 December, 2025)

Currency unit	–	Tajik somoni (TJS)
TJS1.00	=	$ 0.1081
$1.00	=	TJS 9.2513

ACRONYMS AND ABBREVIATIONS

ADB	Asian Development Bank
CEP	Committee for Environmental protection
EA	Executing Agency
EIA	Environmental impact assessment
EIR	Environmental impact report
EMS	Environmental monitoring station
GDP	Gross domestic product
GHG	Greenhouse gas
GRM	Grievance redress mechanism
IA	Implementing agency
IEE	Initial environmental examination
O&M	Operation and maintenance
OPF	Operators of project facilities
PMDSC	Project Management Design and Supervision Company
PIU	Project implementation unit
RP	Resettlement plan
SPS	Safeguard Policy Statement (of ADB)
SRT	Sludge retention time
SS	Suspended solids
SWM	Solid Waste Management facility
TN	Total Nitrogen
TP	Total Phosphorus
TSP	Total suspended particulates
WHO	World Health Organization
WRB	Water resources bureau
WTP	Water treatment plant
WWTP	Wastewater treatment plant

GLOSSARY

Gosudarstvennyy standart Referred to as GOST	–	the state standards
Hukumat	–	State administrative office at the regional and district levels
Jamoat	–	State administrative union at the village level.
Stroitelnye Normy Referred as SNiP	–	construction codes and regulations

NOTES

(i) The fiscal year (FY) of the Government of Tajikistan and its agencies ends on 31 December.
(ii) In this report, "$" refers to US dollars.

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SUMMARY PROJECT INFORMATION

GENERAL INFORMATION	
Project title:	**Dushanbe Urban Water Supply and Sanitation Project**
Date of project effectiveness:	27 February 2019
Executing agency:	State Executive Authority of Dushanbe City
Implementing agency:	State Unitary Enterprise Dushanbevodokanal
PIG (name of agency):	Project Implementation Group
PIG Environment Officer (name, email):	Kamoliddin Kholov
Loan implementation consultant / firm:	None
LIEC:	None
Project Management Design and Construction supervision company:	SMEC International PTY Limited (AUS) and LLC PANASIA (TAJ)
Contractors:	7
ADB web link to EMP:	https://www.adb.org/projects/documents/taj-50347-002-iee
Domestic web link to EMP:	<insert working web address / link>

ENVIRONMENTAL SAFEGUARD MONITORING	
ADB environment safeguard category:	B
Environmental report prepared as per ADB requirements for this category:	Initial Environmental Examination
Semestrial period covered by this report:	01 July 2025 to 31 December 2025
# EMRs to date including this report:	12
Agency/person responsible for internal* environmental monitoring:	PIG Environmental Specialist
Agency/person responsible for external* environment monitoring:	PMDSC Environmental Consultant
Agency/person responsible for compliance* environment monitoring:	PMDSC Environmental Consultant
Agency/person responsible for independent compliance* monitoring:	PMDSC Environmental Consultant
Overall status of environmental safeguards:	On track

ADB = Asian Development Bank, EMP = environmental management plan, EMR = environment monitoring report, LIEC = loan implementation environment consultant, PMO = project management office.
*See Section III.3 for definitions of internal, external, compliance, and independent compliance monitoring.

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EXECUTIVE SUMMARY

1. This Semestrial Environmental Monitoring Report (EMR) presents the environmental safeguards performance of the Dushanbe Urban Water Supply and Sanitation Project for the period 1 July 2025 to 31 December 2025. The report has been prepared in accordance with the Asian Development Bank (ADB) Safeguard Policy Statement (2009) and the project's approved Initial Environmental Examination (IEE) and Environmental Management Plan (EMP). It represents the 12th and final EMR, covering the late construction and post-construction phase of the project

2. The project became effective on 27 February 2019 and, as of 31 December 2025, has achieved 100% physical completion, consistent with the elapsed implementation period. All civil works under the original scope have been finalized, and the project is currently rated by ADB as "On Track." The remaining activities relate primarily to demobilization, commissioning, post-construction environmental audits, and transition to the operational phase.

3. The project was designed to rehabilitate and expand climate-resilient water supply and sanitation infrastructure in Dushanbe, while strengthening the institutional and operational capacity of the State Unitary Enterprise Dushanbevodokanal (DVK). Key investments included rehabilitation of water intakes, pumping stations, reservoirs, transmission and distribution pipelines, district metering areas (DMAs), installation of smart meters and SCADA systems, and rehabilitation of priority sections of the South Sewage Collector. Institutional strengthening measures focused on non-revenue water reduction, asset management, customer service, and operational efficiency.

4. During the reporting period, environmental safeguard implementation remained satisfactory, with no significant environmental incidents, non-compliance cases, or unresolved corrective actions recorded. Contractors continued to implement approved Site-Specific Environmental Management Plans (SSEMPs), including Waste Management Plans, Occupational Health and Safety (OHS) Plans, Spill Prevention Plans, and hazardous materials management procedures. Mitigation measures related to air quality, noise control, waste management, traffic management, occupational and community health and safety, and protection of sanitary protection zones (SPZs) were consistently applied and monitored.

5. Environmental monitoring during the period relied primarily on regular site inspections and compliance monitoring, as no community complaints or environmental exceedances were reported that would have triggered instrumental monitoring. In total, 43 site inspections, including joint inspections by the Project Implementation Group (PIG) and the Project Management Design and Supervision Consultant (PMDSC), were conducted. Minor issues, mainly related to the use of personal protective equipment (PPE), were identified and promptly resolved through corrective actions and on-site instructions.

6. The Grievance Redress Mechanism (GRM) remained functional throughout the project. No environmental, health, or safety grievances were recorded during this reporting period, and all historical grievances had been fully resolved.

7. Compliance with all environmental covenants and assurances under the ADB grant and project agreements has been maintained. EMP provisions were fully integrated into bidding documents and contracts, adequate human and financial resources were allocated for safeguards implementation, and environmental monitoring and reporting obligations were met in a timely manner. This report constitutes the final EMR, as all construction works under the project have now been completed

8. Looking ahead, the focus will shift to post-construction environmental audits, scheduled for completion by March 2026, and to the operation-phase environmental management under DVK. Environmental responsibilities, including implementation of the OHS Plan, Emergency Response Plan, and Chlorine Management Plan, will be fully transferred to the operator. Lessons learned from this project—particularly regarding proactive monitoring, contractor coordination, and community engagement—will inform ongoing activities and related investments under the G0841 Dushanbe Urban Water Supply and Sanitation Project – Additional Financing.

I. INTRODUCTION

1. Purpose of report

9. The purpose of this final environmental monitoring report (EMR) is to describe and assess progress for implementation of the environmental management plan (EMP) for the Dushanbe Urban Water Supply and Sanitation Project, for the reporting period 01 July 2025 to 31 December 2025. This EMR is submitted in compliance with the Safeguard Policy Statement (SPS)[1] of the Asian Development Bank (ADB) and the loan agreement between ADB and the project executing agency.

10. This is the 12th EMR for the project. It covers part of the post construction phase of the project. The report describes: (i) implementation of mitigation measures; (ii) monitoring activities; (iii) public consultations (including grievance redress); (iv) training and capacity building; (v) expenditures for EMP implementation (including mitigation, monitoring, and training); (vi) reporting; and (vii) an overall assessment of key achievements, challenges, issues, corrective actions, and lessons learned, during the reporting period.

2. Project outcome, outputs and subcomponents

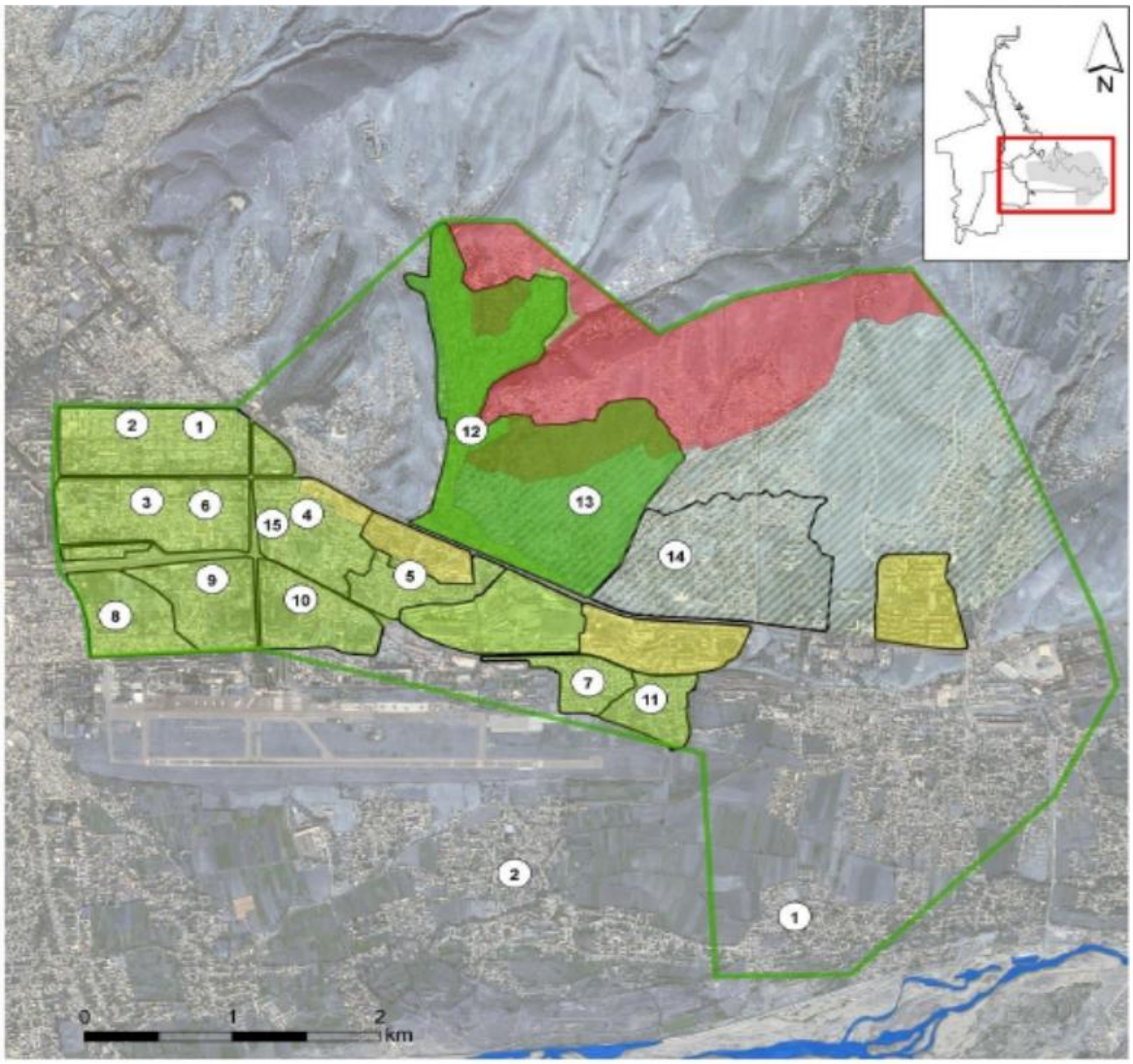
11. The water supply and sanitation systems in Dushanbe have deteriorated over the years due to a combination of age, lack of continued capital investments and lack of proper operation and maintenance. The water supply system is characterized by intermittent operation, high non-revenue water (NRW), low water pressures and low energy efficiency. The expanding urban areas, particularly in the eastern part of the city, are not connected to the water and sewerage system. The lack of public understanding to conserve water as a natural resource combined with low tariffs has led to uncontrolled consumption and wastage of water.

Figure 1. Location of the project

[1] ADB. 2009. Safeguard Policy Statement. Manila.

12. The sanitation infrastructure provides only limited coverage within the city and the peri-urban areas. The existing network is in a generally poor condition resulting in potential groundwater pollution and overflows to water bodies and to land. In particular, the south collector sewer is dysfunctional being partly blocked due to poor design and construction leading to critical adverse sanitary and environmental conditions in large areas of the south-eastern part of Dushanbe.

13. The Asian Development Bank (ADB) allocated Grant No. 0612-TAJ in the amount of $41.22 million in accordance with the Financing Agreement for the Dushanbe Water Supply and Sanitation Project (DWSSP). This project is the first ADB-funded project for the SUE "Dushanbevodokanal" (DVK). The scope of work of the allocated grant includes the rehabilitation of water supply, sewerage facilities and the strengthening of the institutional capacity of the SUE "Dushanbevodokanal" to improve its services in the Shohmansur district and the districts located in the southeastern part of the city. Figures below show the detailed location of project sites and area of interventions.



Areas of intervention

- Priority area boundary
- Areas with measures for WS and sewerage networks
- Category A: Old network high NRW areas
- Category B: Areas under scheduling partially rehabilitated
- Category C: Rehabilitation by WB
- Category D: Extension areas, low population density

Shohmansur district of Dushanbe city (mahallas)

1	Chehov	10	Bedil
2	N Muhammad	11	Chanoro-2
3	Shohmansur-1	12	Karotegin
4	Shohmansur-2	13	Zebunniso
5	Shohmansur-3	14	Hovaron
6	Vosifi	15	Shodi
7	Chanoro-1	**Rudaki district**	
8	Afzali	1	Jamoat Guliston
9	Dilshodi Barno	2	Jamoat Kushteppa (Rossiya)

Figure 2. Project area

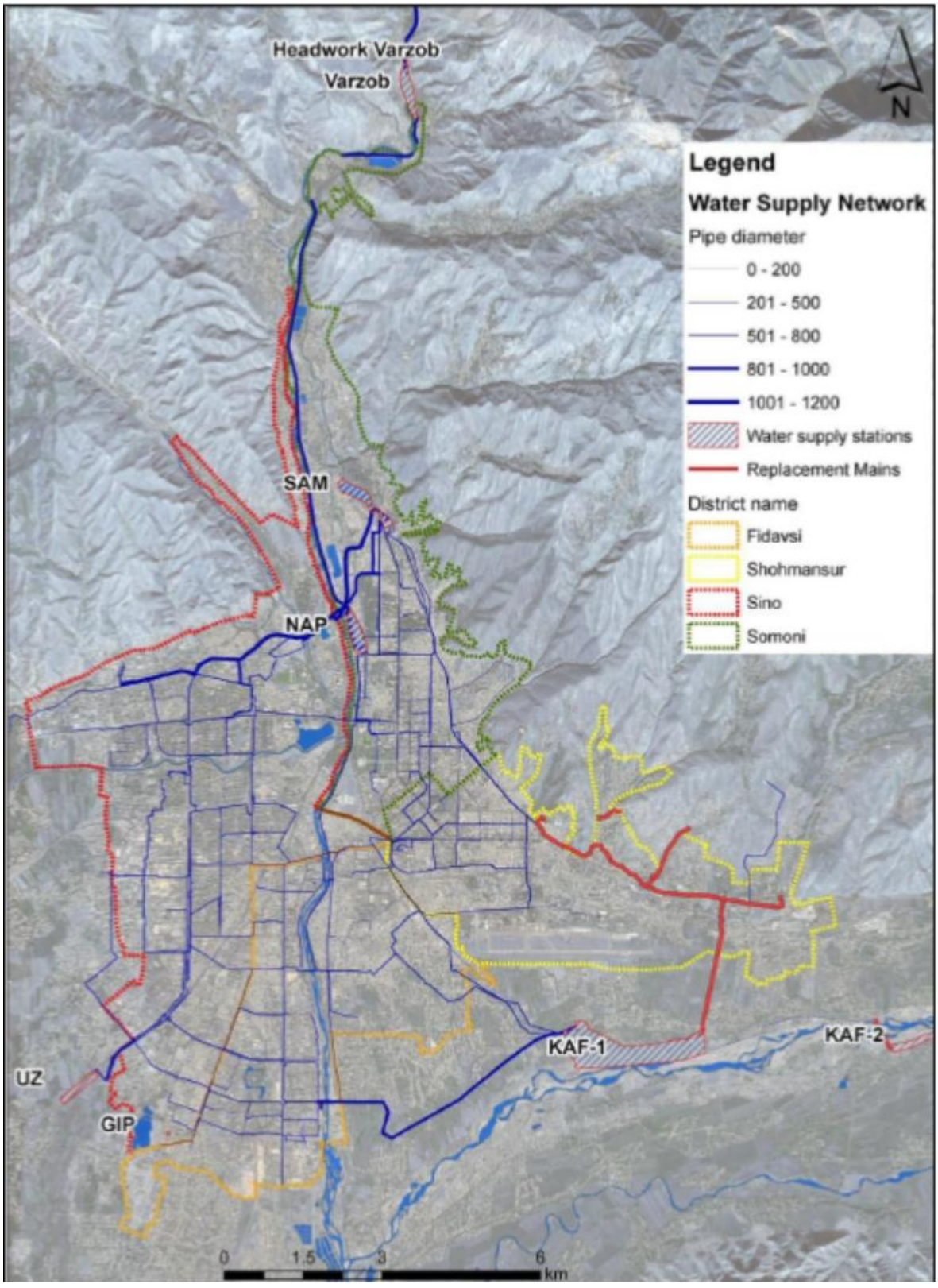


Figure 3. Water supply network in Dushanbe and project district Shohmansur

14. There are following outputs of the project:

Output 1: Climate-resilient water supply and sanitation infrastructure rehabilitated and expanded. This output will be delivered through

(i) rehabilitating 17 wells, 22 pumps and second stage pump stations, water metering, chlorination, and other facilities at Kafernigan I, including the installation of a SCADA system;

(ii) reducing NRW through the rehabilitation of 12 km of the line which is used for conveying water to the distribution system (transmission main), the establishment of 18 district metering areas (DMAs): with the installation of 42 bulk meters and 5,220 smart meters, and the improvement of 57.5 km of distributional pipeline in six DMAs;

(iii) increasing the reservoir storage for Khovaron and Zebuniso mahallas to a total capacity to 4,000 m3 , which will supply approximately an additional 2,000 households with drinking water; and

(iv) rehabilitating the South sewage collector of 9.412 km.

Output 2: Sustainable business model and institutional capacity developed. This output will be delivered through prioritized institutional strengthening actions:

(i) a business model for DVK developed that covers technical, operational, and institutional organizational restructuring; and human resources management;

(ii) an accountability and incentive mechanism established, with a performance benchmarking matrix;

(iii) a smart management system enhanced for operational efficiency; asset management; and seamless integration of the customer database, billing, collection, accounting, and reporting;

(iv) an NRW management system operationalized, with the installation of SCADA for new network management practices for the 18 DMAs equipped with flow meters, smart meters for household service connections, active leak detection, and calibration of meters;

(v) institutional, technical, and financial capacity improved; and

(vi) customer care service standards developed and behavior change communication on water conservation and smart metering conducted.

15. The project, includes 4 Civil Works (CW) packages:

CW-01: Rehabilitation of the Water Supply System in Shomansur district, Phase 1.

Lot 1 (CW-01/1): Reconstruction of the KAF-1 water intake structure (awarded to JSC “Tojikgidroelectromontaj” in Nov 2021, started April 2022, completion by May 2023).

Lot 2 (CW-01/2): Construction and rehabilitation of main water pipelines (awarded to a JV between JSC “Tojikgidroelectromontaj” and Azkompozit LLC in Nov 2021, started March 2022, completion by Q4 2024).

CW-02: Reconstruction of PS Khovaron, construction of Zebunisso reservoir, and replacement of water distribution networks in DMAs A14 and AB15 (awarded to OJSC “TajikSGEM” in Nov 2020, started Feb 2022, completed Nov 2023).

CW-03: Rehabilitation of the South Sewage Collector, split into three parts after the termination of Ludwig Pfeiffer Hoch- und Tiefbau GmbH& Co.KG's contract:

CW-03/2: Completion of unfinished works and rehabilitation from K39-K50, K81-K94, and 24m from K94.

CW-03/3: Rehabilitation from K1-K39.

CW-03/4: Rehabilitation from K56-K81 and K98 to the connection point (awarded to a JV of JSC Tojikgidroelectromontaj and Azkompozit LLC in Nov 2022, started March 2023, completion by Q3 2024).

CW-04: Replacement of water distribution networks and installation of measuring devices in DMAs:

Lot 1 (CW-04/1): Replacement in DMAs A1, A2, A3, and A4 (awarded to "Story-Centr" LLC in June 2022, started Oct 2022, completion by Q3 2024).

Lot 2 (CW-04/2): Installation of measuring devices in DMAs A5, 6, 7, 8, 10, 10-1, 12, 13, C-9, 11, 17, B-16, and SCADA system for DMA and KAF-1 (awarded to a JV between "Blue Star Group" LLC and LLC "Joint Venture Ittihod Inshoot and Zumrut" in June 2022, started Oct 2022, completion by Q3 2024).

3. Project implementation progress

16. The project became effective on 27 February 2019 As of 31 December 2025 physical progress by the project was estimated by the project management office (PMO) to be 100%, against the elapsed implementation of 100% (70 months out of 73 months since the date of project effectiveness). The project is currently rated by ADB as on track. Implementation progress for subcomponents is summarized in Table 1.

Table 1: Project implementation progress as of 31 December 2024

Contract No.	Contract Name	Status	Civil work starting date	Name of contractor	Name of PMDSC	Implementation Description
I. Rehabilitation of Water Supply System in Shomansur district Phase 1.						
CW-01/1:	Rehabilitation of Reconstruction of the water intake structure KAF-1.	Construction completed	*April 2022*	*JSC Tojikgidroelectromontaj (TGEM)*	SMEC International PTY Limited	All construction works have been successfully completed, and the facility has been formally handed over to DVK and is currently fully operational. The defects liability (warranty) period remains in effect and is scheduled to expire in May 2026.
CW-01/2:	Construction and rehabilitation of portions of main water pipeline.	Construction completed	March 2022	Joint venture between JSC TGEM and Azkompozit LLC	SMEC International PTY Limited	All construction works have been fully completed, and the defects liability (warranty) period expired in 2025.

Contract No.	Contract Name	Status	Civil work starting date	Name of contractor	Name of PMDSC	Implementation Description
II. Reconstruction of PS Khovaron, construction of Zebunisso reservoir, and replacement of water distribution network in DMAs A14 and AB15.						
CW-02	Reconstruction of PS Khovaron, construction of Zebunisso reservoir, and replacement of water distribution network in DMAs A14 and AB15.	Operational	February 2022	JSC TajikSGEM	SMEC International PTY Limited	All construction work has been completed, an environmental audit has been conducted after the construction is completed, and the operation is carried out by the State Unitary Enterprise DVK
III. Rehabilitation of the south sewage collector.						
CW-03	Rehabilitation of the south sewage collector	Contract terminated	February 2021	Ludwig Pfeiffer Hoch- und Tiefbau GmbH& Co.KG	SMEC International PTY Limited	Contract terminated
CW-03/2	3/2 Rehabilitation of the south sewage collector. Lot 2: Finalization unfinished works of Lot 1 and Rehabilitation of the South Sewage Collector Sections from K39 to K50, K81 to·K94, 24meter around K 94. Including Amendment : Additional works 1000 meters between K26 to K39, plus from K56 to connection point of K15	Construction completed	May 2022	Kangurt 2 LLC	SMEC International PTY Limited	All construction work has been completed,
CW-03/3	Rehabilitation of the South Sewage Collector Sections from K1 to K26	Implementation responsibilities have been formally transferred to the **G0841 Dushanbe Urban Water Supply and Sanitation Project – Additional Financing.**				
CW-03/4	Rehabilitation of the South Sewage Collector Sections from K56 to K81, from K98 to Connection point (end of the line)	Construction completed	March 2023	Joint venture between JSC TGEM and Azkompozit LLC	SMEC International PTY Limited	All construction work has been completed,

Contract No.	Contract Name	Status	Civil work starting date	Name of contractor	Name of PMDSC	Implementation Description
IV. Replacement of water distribution network & installation of measuring devices in DMAs.						
CW-04/1	Replacement of water distribution networks in DMAs A1, A2, A3, and A4.	*Operational*	August 2022	LLC "Stroy-Center"	SMEC International PTY Limited	All construction work has been completed, and the warranty period expires in June 2026.
CW-04/2	Installation of measuring devices for DMAs A5, 6, 7, 8, 10, 10-1, 12, 13, C-9, 11, 17 and B-16; and SCADA system for DMA and KAF-1.	Construction completed	September 2022	Joint venture between between "Blue Star Group" LLC and LLC "Joint Venture Ittihod Inshoot and Zumrut"	SMEC International PTY Limited	All construction work has been completed, and the warranty period expires in 2026.

PMDSC =Project management Design and construction supervision company.

17. The **CW-01** project, which focuses on the rehabilitation of the water supply system in the Shomansur district (Phase 1), consists of two lots. **Lot 1 (CW-01/1)** involves the reconstruction of the KAF-1 water intake structure, with all construction works completed in December 2024, and de-mobilization currently in progress. Similarly, **Lot 2 (CW-01/2)**, covering the construction and rehabilitation of main water pipelines, was also completed in December 2024, with de-mobilization underway. The post-construction audit report will be finalized by the end of March 2026.

18. The **CW-02** project, which included the reconstruction of the PS Khovaron, construction of the Zebunisso reservoir, and replacement of water distribution networks in DMAs A14 and AB15, was fully completed in November 2023. The post-construction audit report has been prepared and approved.

19. The CW-03 project, aimed at rehabilitating the South Sewage Collector, acknowledged significant implementation challenges following the termination of the original contract due to the contractor's financial insolvency. In response, Contract CW-03/2 was launched to complete the outstanding works, including the rehabilitation of sections K39–K50, K81–K94, and an additional 24-meter segment beyond K94. These activities were successfully completed in March 2023. Contract CW-03/3, covering the rehabilitation of sections K1–K39, has not yet commenced, as this segment forms part of an active and operational pipeline, requiring careful sequencing and additional technical considerations. Consequently, implementation responsibilities for the remaining scope have been formally transferred to the G0841 Dushanbe Urban Water Supply and Sanitation Project – Additional Financing.

20. Under the **CW-04** project, which focuses on the replacement of water distribution networks and the installation of measuring devices in DMAs, **Lot 1 (CW-04/1)** is responsible for replacing networks in DMAs A1, A2, A3, and A4. The work is currently 99% complete, with an expected completion date in August 2025, though delays have been reported. **Lot 2 (CW-04/2)** involves the installation of measuring devices in multiple DMAs (A5, 6, 7, 8, 10, 10-1, 12, 13, C-9, 11, 17, B-16) and the SCADA system for DMA and KAF-1. All construction works for this lot were completed in December 2024, with de-mobilization now in progress. The post-construction audit report will be finalized by the end of March 2026.

II. SUMMARY OF THE PROJECT ENVIRONMENTAL MANAGEMENT PLAN

21. The project environmental management plan (EMP) is the primary reference document for the government and ADB for all environment-related mitigation, monitoring, reporting, and training activities for the project. Timely and effective implementation of the EMP is a key condition of the loan agreement between the government and ADB. The EMP was prepared as part of the initial environmental examination in 2018. The EMP is being implemented over 7 years, comprising 3 years of construction and 1 year of operation. The content of the EMP includes: institutional roles and responsibilities for EMP implementation; mitigation measures for environmental safeguard risks; environmental monitoring and reporting; grievance redress mechanism (GRM); cost estimates; and terms of reference for key positions.

22. **Project institutional arrangements (Section H of the IEE).** This section of the EMP describes the roles and responsibilities of relevant agencies for EMP implementation. For this project, the principal person responsible for EMP coordination is the PIG Environment Officer (Mr. Kamoliddin Kholov, environmental engineer), acting on behalf of the PIG. On-site implementation of the EMP is by the implementing agencies, contractors, and construction supervision companies (CSCs).

23. **Potential impacts and mitigation (Section H of the IEE)**. This section of the EMP summarizes the potential environmental impacts and mitigation measures for the different phases of the project: detailed design and pre-construction phase; construction phase; and operations phase. Table 24 in the EMP summarizes the environmental risks and mitigation measures, and agencies responsible for implementation and supervision of these measures. For this project, the key potential impacts and/or issues of concern are:

(i) Air Quality: Dust from vehicle movements, emissions from construction equipment.

(ii) Agriculture: Temporary disruption while laying pipes.

(iii) Rivers (Varzob and Kafarnigan): Degradation of water quality and aquatic habitat.

(iv) Flora: Tree cutting.

(v) Access and Traffic: Blocked access to properties and traffic delays during pipe laying.

(vi) Waste Management: Generation of waste, including hazardous waste (e.g., asbestos).

(vii) Noise: Elevated noise levels during construction.

(viii) Physical Cultural Resources: Minor impacts to cemeteries during pipe laying.

(ix) Health and Safety: Occupational and community health and safety risks..

24. **Training**. The Environmental Management Plan (EMP) does not provide a detailed or specific training schedule for implementation. Despite this, the IEE mentions several training activities:

1. Training for the Contractor's staff:

- Initial Safety Induction Course - All new staff shall be required to attend a safety induction course before they can access the site.

- Periodic Safety Training Courses - Safety training shall be conducted not less than once every six months. All employees will be required to participate in relevant training courses.

2. Training for DVK staff:

- The IEE recommends that DVK strengthen its health, safety and environment (HSE) capacity by assigning at least two of the Contractor's Environmental Health and Safety Officers (EHSOs) to work full-time in the DVK HSE unit after completion of the construction works. This would allow a direct transfer of relevant HSE skills into DVK.

- The PMSDSC is tasked with providing initial training to the PIG Safeguard Specialist prior to the start of the project.

25. **Consultation and participation plan**. The Environmental Management Plan (EMP) does not provide a detailed or specific consultation and participation plan schedule for implementation.

26. **Environmental monitoring program (Section H of the IEE)**. During the pre-construction and construction phases, instrumental monitoring includes soil monitoring for RCRA metals, BTEX, and PAH at two locations per petrol station along pipeline alignments before construction begins. Air quality monitoring will be conducted based on identified issues, such as TSP for dust, at complaint locations or as required. Noise levels (Laeq 1 h dBA) will be measured at complaint locations as needed. Surface water quality monitoring will assess parameters like pH, suspended solids, BOD5, COD, coliforms, nitrate, phosphate, oil, and grease at 50m upstream and downstream of work sites on the Varzob and Kafarnigan Rivers, conducted monthly during bridge construction and riverbank protection works. The IEE does not mandate instrumental monitoring for the operational phase but requires the development and implementation of management plans by Dushanbe Vodokanal (DVK), including an Emergency Response Plan, Occupational Health and Safety Plan, and Chlorine Management Plan. These plans will incorporate relevant monitoring and inspection measures to ensure the safe operation and maintenance of the water supply and sanitation infrastructure

27. **Costs (Section H of the IEE)**. The EMP outlines the estimated mitigation costs for the three project packages. For the pre-construction phase, key costs include the development of site-specific EMPs (SSEMP), design of the source protection zone (SPZ), and compensation payments as per the Land Acquisition and Resettlement Plan (LARP). During construction, standard site management measures are budgeted, such as mobile toilets, spill kits, waste management, and safety equipment. Tree cutting and replanting is also accounted for. Capacity building through health, safety, and environmental training for the contractor, project staff, and PMU is included in the project budget. The contractor will have a full-time Environmental, Health, and Safety Officer (EHSO) on site. For the operational phase, costs are included for developing an Occupational Health and Safety (OHS) Plan, Emergency Response Plan (ERP), and Chlorine Management Plan. Instrumental monitoring of soils, air quality, noise, and water quality is also budgeted throughout the construction period. The total estimated mitigation costs range from $31,400 for Package 1 to $33,400 for Packages 2 and 3, demonstrating the importance placed on environmental and social safeguards for this project.

28. **Reporting**. The Environmental Management Plan (EMP) does not provide a detailed or specific requirements for the reporting. Despite this, the IEE report outlines the reporting requirements for the environmental management and monitoring of the Dushanbe Water Supply and Sanitation Project as follows:

1. Contractor's Reporting: The Contractor will be required to prepare weekly environmental checklists and an environmental section of the Contractor's monthly progress reports. These will be submitted to the Engineer (PMSDSC) for review. The monthly reports will contain sections relating to:

- General progress of the project
- Environmental incidents (e.g. spills, accidents)
- Progress of environmental initiatives (e.g. energy savings, recycling)
- Records of any environmental monitoring

2. PMSDSC Reporting: The PMSDSC Safeguard specialist will make routine visits to the construction sites throughout the project lifecycle to ensure the Contractor's compliance with the environmental obligations. The PMSDSC will prepare Semestrial Environmental Reports to be submitted to the PIG and ADB.

3. PIG Reporting: The PIG Safeguards Specialist will supervise the Contractors' EMP implementation and ensure overall compliance with ADB's Safeguard Policy Statement (SPS 2009) requirements. The PIG Safeguards Specialist will prepare and submit Semestrial environmental, social and health and safety monitoring reports to DVK and ADB for disclosure on the ADB website. The PIG Safeguards Specialist will also report in a timely manner to ADB of any non-compliance or breach of ADB safeguard requirements.

4. DVK Operational Reporting: During the operational phase, DVK will be responsible for implementing the various management plans outlined in the EMP, such as the Emergency Response Plan, Occupational Health and Safety Plan, and Chlorine Management Plan.

III. ENVIRONMENTAL MANAGEMENT DURING THE REPORTING PERIOD

29. This section summarizes the progress made to implement the project EMP during the current reporting period.

1. Implementation of the project mitigation measures

30. Implementation of the mitigation measures in the EMP is summarized in Table 3. This table is the same as Table 24 of the IEE but has 3 additional columns, to summarize the implementation status and compliance for each listed mitigation measure within the reporting period.

Table 3: Project impacts, mitigation measures, and implementation status

Work phase	Potential impacts/issues	Mitigation measure prescribed in EMP	Implementation status, issues identified and corrective actions	In comp-liance?
Design / Pre-construction Phase				
SPZ	Un-defined SPZ leading to groundwater pollution	Follow the procedures defined in **IEE (Section B.3.7 - Sanitary Protection Zones)** to define and establish the SPZ.	First Belt (SPZ-1): No tall tree are planted. No constructed residential/public buildings, pipelines, wastewater discharge, swimming, animal grazing, and the didn't used of fertilizers/pesticides. All tracks having a hard coating. No any construction that not related to water supply facilities. Water facilities are equipped with measures to prevent drinking water contamination. Equipment is installed to monitor actual production rates against designed capacity. Second Belt (SPZ-2): Cemeteries, cattle cemeteries, wastewater fields, manure storages, and livestock/poultry enterprises are prohibited. The application of fertilizers and pesticides is prohibited. Third Belt (SPZ-2/SPZ-3): Wastewater injection and underground solid waste storage are prohibited. The storage of fuel/lubricants, toxic chemicals, and industrial waste is prohibited, except in the	Yes

Work phase	Potential impacts/issues	Mitigation measure prescribed in EMP	Implementation status, issues identified and corrective actions	In comp-liance?
			third belt where groundwater protection measures are in place	
Electrical Equipment	Accidents	All new transformers and substations shall be designed with suitable safety measures, including fencing around the areas to ensure no unauthorized access to these areas.	All new transformers and substations designed with appropriate safety features, including fencing around the premises to prevent unauthorized access.	Yes
	Oil Leaks	Dry transformers should be considered for the Project.	As possible designed to use dry transformers	Yes
Chlorine	Management of Liquid Chlorine	The design of the liquid chlorination facility will be in-line with international best practice, for example: Safe Handling of Chlorine From Drums and Cylinders (second edition), Health and Safety Executive, 2009.	The design of the liquid chlorination facility adhere to international best practices,	Yes
Natural Hazards	Earthquakes	Materials for new pipes and joints linking pipe segments must at least adhere to the current earthquake building standards (SniP).	New pipes and joints have been implemented to meet current earthquake building standards	Yes
General Environmental Management	SEMP	Preparation of an SEMP to include: • Waste Management Plan. • OHS Plan • Spill Prevention Plan. • Hazardous Materials Management Plan. In addition, the Contractor will be responsible for the preparation of the following site specific plan:	All contractors prepared SSEMP	Yes

Work phase	Potential impacts/issues	Mitigation measure prescribed in EMP	Implementation status, issues identified and corrective actions	In comp-liance?
		• Riverbank Works Plan.		
Contamination	Petrol Stations	Ensure designs include double walled pipes at alignments around petrol stations	Designs incorporate double-walled pipes at alignments surrounding petrol stations.	Yes
Land Acquisition and Compensation	Compensation payments	Ensure that LARP is completed and implemented before Contractor starts work.	LARP completed and implemented	Yes
Construction Phase				
General	Construction Principles	Follow the Water Supply Construction Principles outlined in **IEE Section C.1.2.**	Construction uses burst lining, manhole connections, and HDPE (≤200 mm) or DCI/steel (≥350 mm) pipes. Pipes are laid ≥1 m deep, above sewers, with house connections via PPP. Water meters are 15 mm (domestic) or electromagnetic (bulk). Rehabilitation focuses on ≤200 mm pipes.	Yes
Air Quality	Planning	Implementation of the Air Quality Management Plan	A comprehensive air quality management plan has been developed and is being consistently implemented.	Yes
	Exhaust Emissions	No equipment using any fuel that may produce air pollutants, including mobile generators, will be installed without consent of the Engineer. Construction equipment will be maintained to a good standard and fitted with pollution control devices which will be regularly monitored by the Engineer.	No fuel-based equipment emitting air pollutants, including mobile generators, was installed without the Engineer's approval. All construction equipment was maintained to a high standard, fitted with pollution control devices, and regularly monitored by the Engineer.	Yes

Work phase	Potential impacts/issues	Mitigation measure prescribed in EMP	Implementation status, issues identified and corrective actions	In compliance?
	Burning Waste	No burning of debris or other materials will occur on the site.	No burning of debris or other materials	Yes
	Dust	The Contractor will ensure that material stockpiles will be located in sheltered areas and be covered with tarpaulins or other such suitable covering to prevent material becoming airborne. All trucks used for transporting materials to and from the sites will be covered with canvas tarpaulins, or other acceptable type cover (which will be properly secured) to prevent debris and/or materials from falling from or being blown off the vehicle(s). Effective use of water sprays will be implemented (e.g., Carry out watering for dust control at least 3 times a day: in the morning, at noon, and in the afternoon during dry weather with temperatures of over 25°C, or in windy weather. Avoid overwatering as this may make the surrounding muddy). All water used for controlling dust will be free of odor and pollution.	Contractor	
Noise	Construction Noise	Works will be scheduled to coincide with periods when people would least likely be affected; work hours and work days will be limited to less noise-sensitive times. Hours-of-work will be approved by the Engineer having due	• **Material Stockpiles**: Material stockpiles were located in sheltered areas and covered with tarpaulins to prevent materials from becoming airborne. • **Trucks**: Trucks were covered with secured canvas tarpaulins to prevent	Yes

Work phase	Potential impacts/issues	Mitigation measure prescribed in EMP	Implementation status, issues identified and corrective actions	In compliance?

		regard for possible noise disturbance to the local residents or other activities. Construction activities will be strictly prohibited between 10 PM and 7 AM in the residential areas. When operating close to sensitive areas (within 250 meters) such as medical facilities and schools, the Contractor's hours of working shall be limited to 8 AM to 6 PM;
		
		Use temporary noise barriers while working in sensitive locations in case accidence of allowable limits is expected. Placing the barrier close to the source proves to be effective.
		
		Give notice as early as possible to sensitive receptors for periods of noisier works such as excavation. Describe the activities and how long they are expected to take. Keep affected neighbours informed of progress.
		
		Within normal working hours, where it is reasonable to do so:
		
		schedule noisy activities for less sensitive times.
		
		provide periods of respite from noisier works (for example, periodic breaks from jackhammer noise).
		
		The weekend/evening periods are important for community rest and
			debris/materials from falling or blowing off.
			• **Dust Control**: Water sprays were used effectively (e.g., 3 times daily during dry/windy weather). Overwatering was avoided to prevent mud, and water used was odor-free and pollution-free.
			• **Work Scheduling**: Work was aligned with less noise-sensitive times, as approved by the Engineer. Work was prohibited between 10 PM–7 AM in residential areas. Near sensitive areas (e.g., schools, medical facilities), work was limited to 8 AM–6 PM.
			• **Noise Barriers**: Temporary noise barriers were installed near sensitive locations where noise limits were expected to be exceeded.
			• **Noisy Works**: Sensitive receptors were notified in advance for noisier activities (e.g., excavation), and neighbors were kept informed.
			• **Noise Management**:
			  ○ Noisy activities were scheduled during less sensitive times.
			  ○ Periodic breaks were provided from noisier works.
			  ○ Weekend/evening work was avoided to allow community rest.	

Work phase	Potential impacts/issues	Mitigation measure prescribed in EMP	Implementation status, issues identified and corrective actions	In compliance?

		recreation and provide respite when noisy work has been conducted throughout the week. Accordingly, work will not be scheduled during these times.
		
		All mechanical plant is to be silenced by the best practical means using current technology. Mechanical plant, including noise-suppression devices, will be maintained to the manufacturer's specifications. Internal combustion engines are to be fitted with a suitable muffler in good repair.
		
		Fit all pneumatic tools with an effective silencer on their air exhaust port.
		
		Install less noisy movement/reversing warning systems for equipment and vehicles that will operate for extended periods, during sensitive times or in close proximity to sensitive sites. Occupational health and safety requirements for use of warning systems must be followed.
		
		Turn off plant when not being used.
		
		All vehicular movements to and from the site to only occur during the scheduled normal working hours, unless approval has been granted by the Engineer.
		
		Where possible, no truck associated with the work will be left standing with
			• **Equipment**:
			  ○ Mechanical plant was silenced using the best available technology and maintained to manufacturer's specifications.
			  ○ Internal combustion engines were fitted with well-maintained mufflers.
			  ○ Pneumatic tools were equipped with effective silencers.
			  ○ Less noisy warning systems were used for equipment/vehicles operating near sensitive sites.
			  ○ Plant was turned off when not in use.
			• **Vehicular Movements**: Vehicular movements were limited to scheduled working hours unless approved by the Engineer. Idling trucks near residential areas was avoided.
			• **Noise Protection**: Earplugs/earmuffs were provided to workers in areas with noise levels exceeding 85 dB(A).	

Work phase	Potential impacts/issues	Mitigation measure prescribed in EMP	Implementation status, issues identified and corrective actions	In comp-liance?
		its engine operating in a street adjacent to a residential area. Provision of noise protection kits such as ear plug, earmuff, for workers who are working in the area with noise level is higher than 85 dB(A).		
Pipelines	Excavation	Deep excavations in unstable soils will be shored by the Contractor, and below grade construction brought to grade quickly, then excavations closed. Surface soils will be temporarily graded-to-drain and protected as necessary to reduce erosion and sediment runoff.	• Deep excavations in unstable soils were shored. • Below-grade construction was promptly brought to grade. • Excavations were closed. • Surface soils were temporarily graded to drain. • Surface soils were protected to minimize erosion and sediment runoff.	Yes
	Pipeline laying	Minimize the period of time that a segment of excavation is kept open by not allowing trenching to outpace pipe laying by more than a day or so. Trenches will be back- filled and ground leveled after installation of piping. Place only bedding and pipe materials at the location that will be used within the next few days work, well out of the line of traffic. Clean up and remove from the site any excess spoil, wood used for shoring and construction	• Open excavation time was minimized by ensuring trenching did not outpace pipe laying by more than a day. Trenches were backfilled and leveled after piping installation. • Only immediate-use bedding and pipe materials were stored, kept away from traffic. Excess spoil, shoring wood, and construction materials were removed after segment completion. Soil was compacted, and pavement cleaned to reduce dust.	Yes

Work phase	Potential impacts/issues	Mitigation measure prescribed in EMP	Implementation status, issues identified and corrective actions	In compliance?
		materials upon completion of the segment. Compact soil in trench and clean surrounding pavement areas to reduce blowing dust. Provide temporary bridging across the trench at entries to residences and businesses. Otherwise, provide tape barriers to reduce the possibility of an accident. Once work is complete on a segment, pavement surfaces and masonry works (curbs, abutments, stairs, drains, drives, etc.) will be repaired and returned to original condition. All roadway surfaces will be repaired as construction progresses; bid packages will contain a unit bid price for roadway repair, and for repair of any other facility, structure or surface that is likely to be damaged in quantity during construction. The construction approach will minimize the time that any one segment is under construction or roadway/walkway left unrepaired to reduce the construction impact, done by limiting the length of open trench to 100 m or less. The public will be barred from construction areas, and excavations will be fenced and sign posted. Workers will not be allowed to enter	• Temporary trench bridging was provided for residential/business access, or tape barriers were used to prevent accidents. • Pavement, masonry (curbs, stairs, drains, etc.), and roadway surfaces were repaired post-construction. Unit bid prices for repairs were included in bid packages. • Open trench length was limited to 100 m or less to minimize construction impact and ensure timely repairs. • Public access to construction zones was restricted; excavations were fenced and signed. Workers were prohibited from entering trenches deeper than waist height without proper shoring. • Pipeline installation was scheduled post-harvest to reduce impacts on crops and livelihoods.	

Work phase	Potential impacts/issues	Mitigation measure prescribed in EMP	Implementation status, issues identified and corrective actions	In comp-liance?
		trenches deeper than waist height unless they are properly shored. Pipelines are laid after the harvest in order to minimize impacts to crops and livelihoods.		
	Traffic Management	The Contractor will strictly follow his Traffic Management Plan (TMP). Where practical roads shall remain open at all times. If any diversions are required, they shall be outlined in the TMP.	Contractors are following their Traffic Management Plans (TMPs), and no road closures have been implemented.	
	Tree cutting	Where tree cutting occurs on public land the Contractor will follow the CEP approved procedures for tree cutting.	All Contractors required to cut trees have obtained permission from the CEP and has followed the CEP-approved procedures for tree cutting.	
	Tree Re-planting	Where practical the Contractor shall remove existing trees and replant them within the vicinity of the pipeline so as to cause minimal impact. Where this is not possible the Contractor shall discuss with CEP alternative locations for the re-planting of the trees. Where trees will be cut they shall be replaced on a 3:1 basis. The replaced trees shall be the same as the trees cut. The Contractor will be responsible for maintaining the trees for a six month period. If any of the trees die within this	he Contractor replanted existing trees near the pipeline wherever feasible. In cases where replanting was not possible, alternative locations were discussed and agreed upon in consultation with CEP	Yes

Work phase	Potential impacts/issues	Mitigation measure prescribed in EMP	Implementation status, issues identified and corrective actions	In comp-liance?
		period, the Contractor will replace the tree on a 1:1 basis.		
	Pipeline pollutants	Pipelines can be disinfected through chlorination. Initial chlorine concentrations shall be made high enough (about 50 mg/l) to overcome the chlorine demand of contaminants. Chlorination is repeated until residual chlorine is one mg/l, after which the structure is flushed out before being placed into use. Installation contracts shall include a bid item for disinfection of installed piping.	Pipeline disinfection has been done under supervision of State Supervision Service for Sanitary and Epidemiological Surveillance and CEP	Yes
	Contaminated spoil	Spoil material from pipeline trenches around petrol stations will be tested for soil contamination before final disposal. The final disposal locations will be determined based on the results of the soil sampling. Any spoil material classified as hazardous will be disposed of at appropriately licensed facilities.	The water supply pipes near gas stations were not installed.	Yes
Electrical Equipment	Oil Leaks	If oil containing transformers are chosen they will require containment measures to built around them to collect any leak of transformer oils (110% of the volume of the oil in the transformer). The containment area, or 'bund' shall comprise an impermeable base	Transformers are installed indoors, ensuring that any potential leakage of transformer oil is contained and preventing contamination of the soil.	

Work phase	Potential impacts/issues	Mitigation measure prescribed in EMP	Implementation status, issues identified and corrective actions	In comp-liance?
		backfilled with a layer of clean, washed stone free of dirt and fines, averaging 2-4cm in size to help limit the impact of any fires.		
Waste Management	WMP	Implementation of the Waste Management Plan	Contractors developed the Waste Management Plan (WMP) and strictly adhere to it.	
	Recycling	Where possible, surplus materials will be reused or recycled.	Contractor to implement mitigation and keep records of the types and volumes of materials recycled.	
	Hazardous Wastes	Oil and fuel will be stored in mobile bunds to contain spillage (the bund will be able to contain at least 110% of the volume of the largest storage tank within the bund). Spill kits will be provided at all construction sites where fuel and oil is stored and used.	Whenever possible, surplus materials are reused or recycled.	
	Waste Disposal	Waste, both hazardous and non-hazardous, shall be collected and disposed of by a licensed waste management contractor. The Contractor will keep copies of the waste management company's licenses on file at his site office. The Contractor shall also keep a record of the waste volumes and types removed from the site and the waste transfer notes provided by the waste management contractor.	Contractors have obtained permission from CEP to dispose of inert materials at a designated location in Chorbog. Contractors concluded contracts with licensed company SUE Solid waste landfill in Dushanbe for disposing domestic waste	Yes

Work phase	Potential impacts/issues	Mitigation measure prescribed in EMP	Implementation status, issues identified and corrective actions	In comp-liance?
		Suitable number and sized waste containers will be provided at each site for organic waste, hazardous waste and non- hazardous wastes.		
	Asbestos	The Contractor will be responsible for the preparation and implementation of a method statement for the safe removal, storage and disposal of asbestos containing materials from the site. A sample method statement is provided by Appendix B. The statement will follow international best practice, for example; HSE A14 - Asbestos Essentials. Asbestos materials shall only be disposed of at a hazardous waste landfill site.	No ACMs were identified during the operational activities.	Yes
OHS	Accidents and Incidents	Implementation of the OHS Plan.	Contractors developed OHS plans and adhere it	Yes
Hydrology		Ensure no waste materials are dumped in the river, including re-enforced concrete debris. Place mobile generators more than 20 meters from the river. Ensure that no wet concrete waste is dumped in the river. Ensure that no hazardous liquids are placed within 10 meters of the river.	No Riverbank Protection works has been conducted	Yes

Work phase	Potential impacts/issues	Mitigation measure prescribed in EMP	Implementation status, issues identified and corrective actions	In comp-liance?
		Ensure that workers are provided with correct PPE including hi- vis life vests. During piling works ensure that pumped water is filtered through a silt trap before being discharged to the river. Provide areas where concrete mixers can wash out leftover concrete without polluting the environment. This may be in the form of a lined settling pond. Undertake works outside of fish spawning periods.		
SPZ	Management of the SPZ	Control of activities within the SPZ.	State sanitary and Epidemiological Control Bodies CEP	

EMP = environmental management plan, EMU = environmental management unit, PMO = project management office.

31. The Environmental Management Plan (EMP) outlines a comprehensive set of mitigation measures to address potential environmental impacts during various phases of the project. The overall progress in implementing these mitigation measures can be summarized as follows:

32. Compliance Status: Most measures are in compliance: The majority of the mitigation measures prescribed in the EMP are being implemented as planned. For example:

33. Sanitary Protection Zones (SPZ): The SPZ measures, including restrictions on activities in SPZ-1, SPZ-2, and SPZ-3, are being followed. No tall trees are planted, and no unauthorized construction or activities are taking place within these zones.

34. Electrical Equipment: New transformers and substations are designed with safety features.

35. Chlorine Management: The liquid chlorination facility adheres to international best practices, and chlorine handling is being managed safely.

36. Natural Hazards: New pipes and joints meet earthquake building standards (SniP).

37. General Environmental Management: Contractors have prepared Site-Specific Environmental Management Plans (SSEMP), including Waste Management Plans, OHS Plans, and Spill Prevention Plans.

38. Air Quality: A comprehensive air quality management plan is in place, and no fuel-based equipment emitting pollutants is being used without approval.

39. Noise Management: Scheduling of noisy activities during less sensitive times, and use of silenced equipment are being implemented.

40. Pipeline Installation: Deep excavations are shored, and pipelines are laid post-harvest to minimize impacts on crops and livelihoods.

41. Waste Management: Contractors are adhering to the Waste Management Plan (WMP), and hazardous waste is being stored and disposed of properly.

42. OHS: Occupational Health and Safety (OHS) plans are in place, and contractors are following them.

43. Some measures are not yet applicable: Certain mitigation measures are not yet applicable because the related works have not started. For example:

44. Riverbank Protection Works: No riverbank protection works have been conducted yet, so the associated mitigation measures (e.g., preventing waste dumping in the river) are not yet applicable.

45. Asbestos Removal: No asbestos-containing materials (ACMs) have been identified during operational activities, so the measures for asbestos removal and disposal are not yet applicable.

46. Non-Compliance: No significant non-compliance identified.

47. Progress in Specific Areas: Land Acquisition and Compensation: The Land Acquisition and Resettlement Plan (LARP) has been completed and implemented before the contractor started work, ensuring that compensation payments were made as required.

48. Pipeline Disinfection: Pipeline disinfection has been completed under the supervision of the State Supervision Service for Sanitary and Epidemiological Surveillance, with chlorine concentrations and residual levels meeting the required standards.

49. Traffic Management: Contractors are strictly following Traffic Management Plans (TMPs), and no road closures have been implemented, ensuring minimal disruption to traffic.

50. Tree Cutting and Replanting: Contractors have obtained permission for tree cutting and are replanting trees in the vicinity of the pipeline. In cases where replanting is not possible, alternative locations are being discussed with the CEP.

51. Ongoing Monitoring and Supervision: PMDSC and PIG is actively monitoring the implementation of the EMP, particularly in sensitive areas like SPZs and during pipeline disinfection.

52. Contractor Compliance: Contractors are required to keep records of waste volumes, types, and disposal methods, ensuring transparency and accountability in waste management.

53. **Conclusions and next steps.** Most mitigation measures are being implemented, and the project complies with the Environmental Management Plan (EMP). Key measures related to Sanitary Protection Zones, electrical equipment, chlorine management, air quality, noise control, waste management, and occupational health and safety are effectively in place. Contractors are following the EMP, with PMDSC and PIG specialists monitoring compliance.

54. Some measures are not yet applicable due to pending works like riverbank protection and asbestos removal. These will become relevant as the project advances.

55. No significant non-compliance issues have been reported.

56. Follow-up action

- *Preparing The post-construction audit report for the all sub-projects*

- *Regularly monitor all EMP measures, focusing on sensitive areas such as SPZs and water bodies. Ensure contractors keep accurate records of waste management, including volumes, types, and disposal methods. Provide periodic updates on the progress of mitigation measures, particularly for ongoing activities like spoil disposal and riverbank works.*

2. Implementation of the project monitoring program

57. The following environment safeguard monitoring was conducted in the reporting period: Weekly Inspections: Conducted by the PIG specialists to monitor compliance. Throughout the designated reporting period, we did not encounter any complaints or concerns from individuals or stakeholders pertaining to air quality, dust levels, or noise pollution. This lack of feedback suggests that there were no significant issues or disturbances related to air quality or noise in the area under observation.

58. It is also noteworthy that our environmental monitoring plan, which outlines the framework for our monitoring efforts, does not mandate specific air quality measurements in instances where no complaints or concerns have been expressed by community members or stakeholders. This approach underscores our commitment to addressing environmental issues proactively, while also recognizing that a lack of reported concerns can indicate a stable and healthy environment.

59. **Internal monitoring.** The Project Management, Design, and Supervision Consultant (PMDSC) oversees daily project execution, ensuring compliance with environmental safeguards. Environmental specialists from both PMDSC and the Project Implementation Group (PIG) conducted regular site inspections, monitoring contractor performance regarding the Environmental Management Plan (EMP) and Site-Specific Environmental Management Plan (SSEMP). During reporting period total of 43 site visits, including six joint inspections, assessed adherence to environmental regulations, with findings indicating satisfactory implementation.

60. Key activities included reviewing documents, auditing corrective actions, and ensuring contractor compliance with safety and environmental standards. Issues such as improper use of personal protective equipment (PPE) were addressed through training and corrective actions. The Asian Development Bank (ADB) conducted several review missions, highlighting minor concerns and recommending further training on environmental safety. All identified issues, were resolved by the end of the reporting period.

61. The project emphasizes continuous improvement through inspections, audits, and training, ensuring adherence to environmental and safety standards while fostering sustainable development.

62. **Conclusions and next steps.** The Project Implementation Group (PIG) have effectively overseen environmental safeguards implementation through regular site inspections, audits, and corrective measures. The project has demonstrated compliance with the Environmental Management Plan (EMP) and Site-Specific Environmental Management Plan (SSEMP), with most identified issues resolved within the reporting period. ADB's review missions further reinforced the commitment to environmental and safety standards, ensuring that all concerns were addressed in a timely manner. The collaborative approach between stakeholders has contributed to a well-managed and environmentally responsible project execution.

63. Next Steps

Enhanced Training and Capacity Building – Conduct additional training sessions for contractors and subcontractors on environmental safety measures, focusing on PPE compliance and best practices.

3. Public consultations and grievance redress mechanism

64. This section describes the public consultations undertaken during the reporting period and implementation of the project grievance redress mechanism (GRM). Documentation for the consultations and/or GRM (e.g. lists of participants in stakeholder workshops) is in Appendix 4.

Public consultations. Since the Environmental Management Plan (EMP) does not include a detailed consultation and participation plan for implementation and between July 1, 2025, and December 31, 2025, no public consultation meetings were held. These meetings aimed to raise awareness about the project, including its environmental, health, and safety requirements. They also provided residents and other stakeholders near the project sites with an opportunity to learn about the project, including the schedule of upcoming works and activities.

65. **Grievance redress mechanism.** No grievances related to the health and safety and environment were documented during the reporting period. From the beginning of the project, one complaint was received regarding its environmental concern and was fully resolved.

Table 7: Summary of All Grievances Documented during Project Design and Implementation

Grievance	Date submitted to a project agency	Submitted by (# persons affected)	Grievance first received by	Corrective action	Resolved?	Next steps
Project implementation phase, including current reporting period						
1 July 2023 – 31 December 2023						
The concern raised by the residents is that the sidewalk, where the pipe was installed, has not been restored to its original or improved condition as promised before the work commenced.	10 December 2023	Residents of Nisor Muhammad street	PIG	• Meeting with residents of N.Muhammad street; • New works schedule agreed with contractor	Yes	• PMDSC to closely monitor sites

CSC = construction supervision company, PMO = project management office.

4. Training and capacity building

66. During the period from 1 July 2025 to 31 December 2025, no formal training events were conducted, as all physical construction works at the facilities had been completed. Instead, on-site explanatory briefings were held to address issues related to the demobilization of field offices, site clearance, removal of construction materials, and overall cleaning and restoration of all construction areas.

5. Compliance with project assurances

67. The grant agreement and project agreement between the government and ADB includes 7 covenants for environmental safeguards and/or related to environmental issues (Appendix 1). These relate to the timely and effective implementation of the EMP, as well as project-specific assurances tailored to the current project. Compliance with these assurances is a condition of the loan and project agreements. For the current reporting period: (i) all of the assurances are being complied with.

6. Reporting

68. The project reporting requirements for environmental safeguards are summarized in Table 11 and comprise: (i) progress reports from contractors to the PMDSC; (ii) progress reports on monitoring from PMDSC to the PIG; (iii) environmental monitoring reports (EMRs) from the PIG to ADB;

Table 11: Project reporting requirements for environmental safeguards

Reports	From	To	Frequency	Progress this reporting period	Comments
Construction phase					
Progress reports from contractors to the PIG	Contractors	PIG	Monthly	Jul–Dec 2025	Provided
Semiannual EMR	PIG	ADB	Semestrial	Jan–Jun 2025	In progress

ADB = Asian Development Bank, PMDSC = Project Management Design and supervision company, EMP = environmental management plan, EMR = environment monitoring report, EPB = environment protection bureau, LIEC = loan implementation environment consultant, PIU = project implementation unit, PMO = project management office.

69. **Conclusions and next steps.** Progress reporting from the Project Implementation Group (PIG) to ADB has been carried out in accordance with the Environmental Management Plan (EMP) reporting schedule. This report represents the final EMR for the project, as construction activities under all sub-projects have now been fully completed.

IV. LESSONS LEARNED

70. Effective coordination played a crucial role in ensuring compliance with environmental safeguards. The collaboration between the Project Implementation Group (PIG), contractors, and the Project Management Design and Supervision Consultant (PMDSC) facilitated smooth project execution. Regular meetings and site visits enhanced problem-solving capabilities, allowing for the timely resolution of environmental concerns. Proactive environmental monitoring further contributed to compliance, as weekly inspections and real-time monitoring helped identify and mitigate potential risks before they escalated. The involvement of environmental specialists ensured strict adherence to the Environmental Management Plan (EMP).

71. Training also proved essential in improving environmental and safety performance. Monthly sessions for contractors and subcontractors enhanced awareness of occupational health and safety (OHS) measures, proper use of Personal Protective Equipment (PPE), and best environmental practices. Hands-on training was particularly effective in achieving compliance and reducing safety-related incidents. Additionally, a well-structured Grievance Redress Mechanism (GRM) helped address community concerns through individual consultations,

allowing minor issues to be resolved before they escalated. This system ensured timely responses to grievances, minimizing delays and fostering community trust.

72. EMP compliance required continuous adaptation, as unforeseen challenges—such as dust control, noise management, and waste disposal—necessitated site-specific adjustments. A more flexible approach is recommended for future projects. Moreover, construction scheduling was strategically planned to minimize disruptions. Noisy activities were aligned with less sensitive times, such as avoiding evenings and weekends, while temporary access solutions, like trench bridging, ensured minimal inconvenience for businesses and residents. Strong waste management practices were also implemented, preventing environmental contamination through proper hazardous waste disposal and collaboration with licensed waste management contractors.

73. Stakeholder engagement increased project acceptance, even though no major public consultations were held. Small-scale discussions with residents helped improve transparency and trust, highlighting the need for more structured public engagement strategies in future projects. Timely corrective actions further enhanced project efficiency. Issues identified during ADB review missions, such as improper PPE usage, were promptly addressed through training and enforcement, preventing regulatory non-compliance and delays.

74. For future improvements, more structured feedback mechanisms are needed to assess training effectiveness, alongside enhanced reporting systems to track compliance trends. Expanding environmental safeguard training to include advanced risk management and digital monitoring tools will further strengthen project outcomes. These lessons will be critical in enhancing environmental monitoring, safety compliance, and stakeholder engagement in upcoming water supply and sanitation projects.

V. NEXT STEPS

75. With all construction activities under the Dushanbe Urban Water Supply and Sanitation Project now completed, the focus will shift from construction-phase environmental management to post-construction verification, operational oversight, and institutional consolidation. The following actions will guide the next stage of implementation and closure:

76. **Finalization of Post-Construction Environmental Audits.** The post-construction environmental audit reports for all remaining sub-projects will be completed and finalized by the end of March 2026. These audits will confirm compliance with the Environmental Management Plan (EMP), verify the effectiveness of implemented mitigation measures, and document any residual or long-term environmental considerations requiring attention during operation

77. **Transition to Operation-Phase Environmental Management.** Environmental responsibilities will be fully transferred to the State Unitary Enterprise Dushanbevodokanal for the operational phase. This includes continued implementation of operational management plans, such as the Occupational Health and Safety Plan, Emergency Response Plan, and Chlorine Management Plan, in line with national regulations and ADB requirements.

78. **Monitoring of Sensitive Areas and Assets.** Routine oversight will continue for environmentally sensitive components, including sanitary protection zones, water intake structures, reservoirs, and rehabilitated sewerage infrastructure. Particular attention will be paid to preventing unauthorized activities within protection zones and ensuring the integrity of rehabilitated assets during early operation.

79. **Capacity Consolidation and Knowledge Transfer.** Environmental and safety knowledge gained during project implementation will be consolidated through internal briefings and handover sessions with operational staff. This will help ensure continuity of good environmental practices beyond project closure.

80. **Integration with Additional Financing Activities.** For components transferred to the G0841 Dushanbe Urban Water Supply and Sanitation Project – Additional Financing (notably CW-03/3), environmental requirements, baseline information, and lessons learned from the current project will be fully integrated into the planning and implementation framework of the follow-on project.

APPENDIX 1. COMPLIANCE WITH ENVIRONMENTAL ASSURANCES

This appendix lists the environmental safeguard assurances for the project and the status of compliance with these assurances during the reporting period

Schedule	Paragraph	Covenant	Compliance Status
3	3	Environment The Recipient shall, or shall cause DVK, through SEADC, to, not award any Works contract which involves environmental impacts until: a) each of ADB and the State Committee on Environment of the Recipient has granted the final approval of the IEE; and b) the Recipient has incorporated, or has caused DVK, through SEADC, to incorporate, the relevant provisions from the EMP into the Works contract.	Complied Provisions of EMPs are included to the works contract. The "environmental appraisal/ approval" was obtained from SEE on 30.04.2019 (Registration No. 443/15)
3	9	Environment The Recipient shall ensure, or shall cause DVK, through SEADC, to ensure, that the preparation, design, construction, implementation, operation and decommissioning of the Project and all Project facilities comply with (a) all applicable laws and regulations of the Recipient relating to environment, health and safety; (b) the Environmental Safeguards; and (c) all measures and requirements set forth in the IEE, the EMP, and any corrective or preventative actions set forth in the Safeguards Monitoring Report or corrective action plan.	Complied. Ongoing. DVK ensures that preparation and design will comply with Environmental Safeguards requirements and applicable laws and regulations of Tajikistan. DVK/ PIG has appointed the Environmental Safeguards Specialist to ensure compliance.
3	13	Human and Financial Resources to Implement Safeguards Requirements The Recipient shall make available or cause SEADC to make available necessary budgetary and human resources to fully implement the EMP and the RP.	Complied. There are ES hired by PIG, IES and NES hired by PMDSC. Project IEE reflects indicative cost for EMP implementation and human resources
3	14	Safeguards–Related Provisions in Bidding Documents and Works Contracts The Recipient shall ensure, or shall cause DVK, through SEADC, to ensure, that all bidding documents and contracts for Works contain provisions that require contractors to: a) comply with the measures relevant to the contractor set forth in the IEE,	Complied.

Schedule	Paragraph	Covenant	Compliance Status
		the EMP and the RP (to the extent they concern impacts on affected people during construction), and any corrective or preventative actions set forth in the Safeguards Monitoring Report or corrective action plan; b) make available a budget for all such environmental and social measures; c) provide Recipient, through DVK, with a written notice of any unanticipated environmental, resettlement or indigenous peoples risks or impacts that arise during construction, implementation or operation of the Project that were not considered in the IEE, the EMP and the RP; d) adequately record the condition of roads, agricultural land and other infrastructure prior to starting to transport materials and construction; and e) reinstate pathways, other local infrastructure, and agricultural land to at least their pre-project condition upon the completion of construction.	IEE, EMP and RP included to the bidding documents All parties allocated budget for social and environmental measures implementation No unanticipated risk discovered during reporting period Pre- construction photolog prepared Rehabilitation activities will be carried out as the work is completed
3	15	Safeguards Monitoring and Reporting The Recipient shall, or cause DVK, through SEADC to do the following: a) submit semiannual Safeguards Monitoring Reports to ADB within 1 month after the reporting period at the end of each half of the calendar year, and disclose relevant information from such reports to affected persons promptly upon submission; b) if any unanticipated environmental and/or social risks and impacts arise during construction, implementation or operation of the Project that were not considered in the IEE, the EMP and the RP (including, without limitation, as a result of any change of design, baseline or other current conditions), promptly inform ADB of the occurrence of such risks or impacts, with detailed description of the event and proposed corrective action plan;	Complied. a) Last Semestrial environmental monitoring report (covering January to June 2022) was submitted and disclosed on ADB website and at the DVK website in Russian in August 2025 b) COVID-19 HSMP and ERP were prepared by Contractor of all packages as part of its SSEMP; no COVID-19 cases were identified among the workers during the monitoring period. Suspension of CW-03 civil works by the Contractor in December 2021 was considered as an unanticipated impact, whereupon in the beginning of January 2022 a detailed description of the event was presented to the ADB, along with mitigation and management measures to avoid any environmental impacts, incorporated in a separate photoreport in January 2022 c) No breach.

Schedule	Paragraph	Covenant	Compliance Status
		c) report any actual or potential breach of compliance with the measures and requirements set forth in the EMP or the RP promptly after becoming aware of the breach.	
3	17	Labor Standards, Health and Safety The Recipient shall ensure, or shall cause DVK, through SEADC, to ensure, that the core labor standards and the Recipient's applicable laws and regulations are complied with during Project implementation. The Recipient shall, or shall cause DVK, through SEADC, to include specific provisions in the bidding documents and contracts financed by ADB under the Project requiring that the contractors, among other things: a) comply with the Recipient's applicable labor law and regulations and incorporate applicable workplace occupational safety norms; b) do not use child labor; c) do not discriminate workers in respect of employment and occupation; d) do not use forced labor; e) allow freedom of association and effectively recognize the right to collective bargaining; and f) disseminate, or engage appropriate service providers to disseminate, information on the risks of sexually transmitted diseases, including HIV/AIDS, to the employees of contractors engaged under the Project and to members of the local communities surrounding the Project area, particularly women.	Complied. Ongoing. PDMSC combined with PIG monitoring to comply with standards PDMSC combined with PIG monitoring. Workers code of conduct prepared PDMSC combined with PIG monitoring. PDMSC combined with PIG monitoring. PDMSC combined with PIG monitoring.
3	18	Labour Standards, Health and Safety The Recipient shall, or shall cause DVK, through SEADC, to strictly monitor compliance with the requirements set forth in the foregoing paragraph and provide ADB with regular reports.	Complied. Ongoing.

APPENDIX 2. MONITORING DATA

No instrumental monitoring conducted during current period

APPENDIX 3. PHOTOGRAPHS

APPENDIX 4. PUBLIC CONSULTATIONS AND GRIEVANCE REDRESS

Since the commencement of the project, a total of 1,035 people have participated in consultation meetings, including 554 men and 471 women. During these consultations, participants were informed about the planned construction activities related to the installation of drinking water pipelines and sanitation infrastructure along the streets in their areas of residence.

APPENDIX 5. TRAINING ACTIVITIES

In accordance with the project work plan, the PIG, together with the contractor of Package CW-01/1, organized and delivered a three-day seminar on the fundamentals and operation of the SCADA system. The seminar was conducted for representatives of various departments of the State Unitary Enterprise “Dushanbevodokanal”, as well as for the personnel of the PIG. A total of 70 participants attended the training.